Oak Ridge Enhanced Work Planning

EWP "Success Story" Verification and Validation

EWP V&V#:002

Title: **Calculation of $384,000 Cost Avoidance**: Reduction of "Fully-Planned" Work Packages through Up-front Support Group Participation and Enhanced Use of the "Minor Maintenance"

Location: 9212 Resumption Project,Y-12 Plant, Oak Ridge

Affected Groups:
- Y-12 Planners, Facilities Management Organization
- Craft
- Configuration Control
- Industrial Safety
- Maintenance Coordinators, Enriched Uranium Operations

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Time Frame: March through June 1997

Summary:

EWP efforts at Y-12 have resulted in a predicted annual cost avoidance of $384,000 stemming from reducing the number of maintenance work packages requiring "full planning" to the less rigorous "minor maintenance" planning. The EWP team determined that many planning and work execution bottlenecks could be avoided without jeopardizing safety or needed organizational controls if: 1) greater reliance could be placed on the skill of the worker/supervisor; and 2) up-front communication was improved between the planners and others involved (particularly industrial safety, configuration control, and craft). (see attached details)

Approvals:

Ray Smith	Deputy Manager, FMO, Y-12	_____	____
James Bolon	Maintenance Manager, EUO Resumption	_____	____
Roy Stalliongs	Planning Manager, FMO, Y-12	_____	____
Charlie Boruff	Millwright, FMO, Y-12	_____	____
Fran Roach	Electrician, FMO, Y-12	_____	____

Oak Ridge Enhanced Work Planning

Calculation of $384K Cost Avoidance:
Reduction of Fully-Planned Work Packages through Up-front Support Group Participation and Enhanced Use of Minor Maintenance at 9212 Resumption Project ,Y-12
(August 8, 1997)

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Success for the 9212 Resumption effort stemmed from using the EWP process as a means to identify and resolve work control problems through the collaboration of a multi-disciplinary team of involved stakeholders. Specifically, the EWP Team identified that great efficiencies and savings could result if more jobs could be legitimately removed from those requiring "full planning" to instead those requiring less rigorous planning (e.g., "minor maintenance"). It was determined that many planning and work execution bottlenecks could be avoided without jeopardizing safety or needed organizational controls if greater reliance could be placed on the skill of the worker and supervisor as well as up-front communication between various groups involved with planning the work. In June 1997, the Y-12 EWP Team began piloting within the 9212 Restart operations an enhanced work control process whereby new criteria were used for determining whether planners must generate a "fully planned package" versus allowing the job to be planned less rigorously as "minor maintenance".

Specifically, rather than allow a job to be kicked out of the "minor maintenance" category strictly on the basis that it requires some planning involvement of configuration control and/or industrial safety subject matter experts, these experts and others are now being brought into the planning process early to help determine the need for their subsequent involvement. Rather than automatically assuming that a configuration control or
industrial safety issue will force the work to be "fully planned", planners and the experts now work closely together up-front to determine the necessary extent of their involvement. Essentially, this enhancement now allows many configuration control and industrial safety issues to be addressed in a "minor maintenance" package rather than through only a "fully planned package".

This enhancement, "streamlining the up-front communication of the planners and configuration

control/industrial safety experts so that it can be determined whether a "fully planned" work package really needs to be created", is anticipated to cut down the number of "fully planned packages" in the 9212 Complex by about 60% (from about 70 fully planned packages per month to approximately 30). In general, a fully planned package requires between several hours to over a week to plan whereas a "minor maintenance" job can be typically be planned in a half hour or less. Thus, the legitimate and defensible reduction in the number of "fully planned" maintenance packages promises to dramatically increase efficiencies of the planning process and allow the planners to better devote their time to those jobs needing it most.

Quantification of Annual Cost Avoidance:

Cost Reduction Assumptions:

1. Monthly reduction in "fully planned packages": from 70 to 30; Equates to 40 packages x 12 months= 480/year.

2a. Average planner hours to prepare "fully planned" package: 12 hours

b. Average planner time to prepare "minor maintenance" package: ½ hour

c. Average per package reduction in time for planners to prepare "minor maintenance" package instead of "fully planned" package: 11.5 hours

d. Average burdened rate of planner: $53.35/hour

3a. Average time savings for work crew to review a less complicated work package (less "boilerplate"/more value added details): 2 man hours/package

b. Average burdened hourly rate of work crew member: $63.70/hour

4a. Average time savings for project management, data entry personnel, and other work package reviewers (e.g., customers, facility owners, etc.): 1 man hour/package

b. Average burdened rate of other work package reviewers: $59.46/hour

Cost Reduction Calculation:

(480 packages/year) x [(11.5 planner hours /package x $53.35/hour) + (2 work crew man hours/package x $63.70/hour) + (1 'other reviewer" hour/package x $59.46/hour)]

= $ 384,184

Cost Additions Assumptions:

Although additional 'up-front time" by support organizations would be spent on a greater number of packages than before, it is estimated that this time would be equal to or less than the time spent as a result of being pulled into a smaller number of jobs at the "eleventh hour". Consequently, no cost additions are listed.

Cost Addition Calculation:

--none--

Net Cost Avoidance (cost reductions less cost additions): $384,000/year